In Reply: Laser Interstitial Thermal Therapy for First-Line Treatment of Surgically Accessible Recurrent Glioblastoma: Outcomes Compared With a Surgical Cohort

To the Editor:

We would like to thank the authors[1] for their thoughtful consideration and comments regarding our manuscript "Laser Interstitial Thermal Therapy for First-Line Treatment of Surgically Accessible Recurrent Glioblastoma: Outcomes Compared With a Surgical Cohort."[2] Our objective was to contextualize the efficacy and safety of laser interstitial thermal therapy (LITT) by comparing outcomes with standard surgical resection. We appreciate the authors acknowledging the potential impact of LITT as first-line treatment of recurrent glioblastoma (GBM) and the future research necessary to broaden the use of LITT for glioma. Here, we would like to address the valuable concerns highlighted by the authors to enable a more holistic understanding of our reported outcomes.

Our inclusion and exclusion criteria were carefully selected to limit the scope of the study to patients with surgically accessible lesions that could otherwise be treated with a craniotomy as is the standard of care. Because of our strict inclusion and exclusion criteria, patients ultimately included in the analysis had nearly identical preoperative characteristics and initial GBM management. All but 1 patient in the LITT cohort had undergone previous open resection followed by concomitant external-beam radiation therapy and temozolomide (TMZ)—1 LITT patient was enrolled in an open-label study investigating the efficacy of a kinase inhibitor in combination with radiotherapy and TMZ. Of the 23 patients in the surgical cohort, 19 had undergone initial resection followed by concomitant external-beam radiation therapy and TMZ—4 patients were enrolled in open-label studies investigating the addition of kinase inhibitors or a monoclonal antibody against PD-1 to the standard adjuvant therapy. No patients in our study had received SRS before LITT or craniotomy. While our cohort size limits the ability to determine whether LITT patients respond more or less favorably to different experimental regimens, this is an interesting question for future research.

As noted in the commentary, postintervention management may influence our reported outcomes. All patients included in the analysis were closely followed after the intervention with serial clinic visits and surveillance imaging per institutional guidelines. Each patient was also reviewed by our institution's multidisciplinary tumor board immediately after the intervention and at follow-up imaging acquisition. Because of a multitude of factors influencing postoperative treatment, further adjuvant care in the form of chemotherapy, salvage radiotherapy, tumor treating fields device use, or further operative intervention was made at the discretion of our multidisciplinary tumor board. However, there was no statistical difference between postintervention care between the cohorts; therefore, we did not feel that small variation in postintervention management significantly influenced our findings.

Finally, we agree that symptom relief after glioma treatment is a major factor in patient quality of life and functional outcomes. As our study focused on recurrent GBM, most of our patients experienced disease progression on serial imaging before the onset of overt clinical symptoms. We did not include Karnofsky Performance Scale or long-term functional outcomes at the time of progression in our data collection, but importantly, we found surgery to result in more than double the rate of postoperative drop in Karnofsky Performance Scale compared with LITT, although this finding was not statistically significant likely secondary to small sample size.

We appreciate the authors' review of our work and thoughtful comments. We hope our response provides further clarification of our findings and highlights avenues of necessary future investigations.

Funding

This study did not receive any funding or financial support.

Disclosures

The authors have no personal, financial, or institutional interest in any of the drugs, materials, or devices described in this article. Ian Y. Lee is a consultant for Monteris.

Hassan A. Fadel, MD
Jacob A. Pawloski, MD
Ian Y. Lee, MD
Department of Neurosurgery, Henry Ford Hospital, Detroit, Michigan, USA

REFERENCES

1. Mehkri Y, Sharaf R, Reddy A, Lucke-Wold B. Letter: Laser interstitial thermal therapy for first-line treatment of surgically accessible recurrent glioblastoma: outcomes compared with a surgical cohort. *Neurosurgery.* 2023;XX(XX):XX-XXX.
2. Fadel HA, Haider S, Pawloski JA, et al. Laser interstitial thermal therapy for first-line treatment of surgically accessible recurrent glioblastoma: outcomes compared with a surgical cohort. *Neurosurgery.* 2022;91(5):701-709.

10.1227/neu.0000000000002722